

17. The mutant polymerase of Claim 15 wherein the wild-type form of the mutant polymerase is obtainable from Euryarchaea.

18. The mutant polymerase of Claim 15 wherein the wild-type form of the mutant polymerase is obtainable from *Thermococcus aggregans*.

19. The mutant polymerase of Claim 15 wherein the wild-type form of the mutant polymerase is SEQ ID NO:34.

20. The mutant polymerase of Claim 15 wherein the tyrosine of the Y-GG/A amino acid motif is substituted with an amino acid with an aromatic side chain.

21. The mutant polymerase of Claim 20 wherein the tyrosine of the Y-GG/A amino acid motif is substituted with a phenylalanine, a tryptophan or a histidine.

22. The mutant polymerase of Claim 15 wherein the tyrosine of the Y-GG/A amino acid motif is substituted with an amino acid with a hydrophilic side chain.

23. The mutant polymerase of Claim 22 wherein the tyrosine of the Y-GG/A amino acid motif is substituted with an asparagine or a serine.

24. A DNA encoding the mutant polymerase of Claim 15.

25. A vector comprising the DNA of Claim 24.

26. A host cell comprising the DNA of Claim 24 or the vector of Claim 25.

27. A process for obtaining a mutant polymerase comprising purification of the mutant polymerase from the host cell of Claim 26.

28. A process for synthesizing nucleic acids, comprising contacting the mutant polymerase of Claim 15 with nucleotides, a primer and a polynucleotide template under conditions suitable for elongation of the primer.

A<sup>1</sup> 29. A process for polynucleotide amplification comprising contacting the mutant polymerase of Claim 15 with nucleotides, primers and a polynucleotide template under conditions suitable for amplification of the polynucleotide.

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